

### Abstract

A higher olefin polymer having a polar group which is produced by subjecting to an incorporation reaction of a polar compound or halogen compound into a higher  $\alpha$ -olefin polymer satisfying the requirements of the following (1) and (2), which is obtained by polymerizing one or more higher  $\alpha$ -olefins having 10 or more carbon atoms or copolymerizing one or more higher  $\alpha$ -olefins having 10 or more carbon atoms with one or more other olefins and a method for producing a higher olefin polymer having a polar group which is obtained by polymerizing one or more higher  $\alpha$ -olefins having 10 or more carbon atoms or copolymerizing one or more higher  $\alpha$ -olefins having 10 or more carbon atoms with one or more other olefins to form a higher  $\alpha$ -olefin polymer satisfying the requirements of the following (1) and (2) and subsequently subjecting to an incorporation reaction of a polar compound or halogen compound into the higher  $\alpha$ -olefin polymer.(1) The content of units of a higher  $\alpha$ -olefin having 10 or more carbon atoms is 50 mol% or more.(2) A single peak X1 which is ascribed to the side chain crystallization and observed at  $15 \text{ deg} < 2\theta < 30 \text{ deg}$  in a wide-angle X-ray scattering intensity distribution is observed.